

SCALABLE HOME CONTROL PLATFORM AND ARCHITECTURE

ABSTRACT OF THE DISCLOSURE

A home-control platform and architecture includes a plurality of serial buses that provide communications among processing devices that are connected to the home-control platform. A bus control unit is configured to allocate the buses among the devices that request communications services. The platform supports one or more control processors that provide an interface to legacy devices, user and network interfaces, browsers, and the like. The platform also accepts optional plug-in cards that perform as coprocessors for specific tasks, such as MPEG encoding and decoding, signal processing, video and audio CODECs, and so on. The software architecture employed to support this platform includes the use of a real-time microkernel Operating System (OS) at the control processors that interfaces with the task coprocessors, and interfaces with a standard OS, such as Vxworks, WinCE, or LINUX. The microkernel OS provides primitives for task memory and CPU space isolation, virus protection, and secure financial transaction services.